Observations of evaporation from a reservoir during the six months, June to November, showed a loss of 37.69 inches, or about 10 inches more than the mean annual rainfall for this place.

Fritsche, Richard.

Niederschlag, Abfluss und Verdunstung auf den Landflächen der Erde. Inaug. Diss. Halle-Wittenberg. Halle. 55 p. 8vo. Zeits. Gewässerk., 1906, 7:321–70. Reviews, Naturw. Rundschau, 1907, 22:111; Petermann's Mitteil., 1907, 53:16 (Literaturbericht); Exp. sta. rec., 1908, 20:114.

General estimates of annual rainfall, run-off, and evaporation on the land surfaces of the globe, revised from Murray (1887), and Brückner (Met. Zeits., 1887, 4:[63]), and gives a table of evaporation according to latitude. (See also Brückner, 1908.)

Ginestous, C.

Meteorology of Tunis, winter of 1905–6. Bul. dir. agr. et com., Tunis, 1906, 10:114–28. Abstract, Exp. sta. rec., 1906, 18:10.

Sumarizes observations on pressure, temperature, humidity, rainfall, evaporation, etc., at a large number of stations in different parts of Tunis.

Hann, Julius.

Täglicher und jährlicher Gang der Verdunstung in Südindien. Met. Zeits., 1906, 23:428–9.

Describes some experiments carried on at Trivandrum from 1857 to 1863 by John Allen Brown. Two evaporators, having exposed surfaces of 100 square inches, were filled with sea water, and placed, one in the shade, though exposed to wind, the other in the sun. The evaporation maxima fell in March and September, the minima in June, July, and November. The table of mean daily evaporation gives the annual amounts of 1032.36 millimeters in the shade, and 2523.94 millimeters in the sun.

Henry, Alfred J.

Salton Sea and the rainfall of the Southwest. Mo. weather rev., 1906, 34:557–9.

Shows that the Salton Sea could not effect the rainfall of the Southwest.

[*To be continued.*]

PHOTOGRAPHING THE LEONIDS OF NOVEMBER, 1909.

To encourage the photographing of the Leonids under favorable atmospheric conditions the Treptow Sternwarte near Berlin, announces the following prizes which it offers:

First prize.—A telescope for amateurs, constructed by G. and S. Merz, Munich, according to a design by Dr. F. S. Archenhold. Mounting is equatorial and various eyepieces are furnished with it. Value = M. 125.00.

Second prize.—Six bound volumes of the illustrated astronomical fortnightly, "Das Weltall." Value = M. 84.00.

Third prize. A complete set of the 21 extra numbers of the "Weltall" comprising the lectures and addresses published by the Treptow Observatory. Value = M. 30.50.

Conditions of the competition.

1. The photographs must be made from a balloon, during the time from November 13 to 16, 1909.

2. The competition is open to the citizens of all nations.

3. The papers and negatives offered in competition are to be signed by a Motto only, and are to be accompanied by a sealed envelope containing the correct address of the contestant, the appropriate motto only to be written on the outside of this envelope.

4. The original negatives, developed and fixed, must be submitted in competition, accompanied by the following data:

a. Place, date, and hour of the exposure.
b. Name of the balloon.
c. Altitude of the balloon.
d. Name of the constellation in which the meteors were observed [photographed].
e. Description of the camera and the lens, giving also its focal length and the aperture employed.
f. Length of the exposure.

5. The original negatives awarded prizes by the three judges, to be named later, together with all rights of publication, become the property of the illustrated periodical "Weltall," published by the Treptow Observatory, Treptow–Berlin, Germany.

6. The last date for receiving photographs in competition is January 1, 1910.

All papers and packages should be addressed,

Herrn Direktor Dr. F. S. Archenhold,
Treptow Sternwarte,
Treptow bei Berlin, Germany.

7. The results of the competition will be published in "Das Weltall."

Directions and hints for photographing meteor showers, etc, may be found in "Das Weltall," 1st Year, No. 3, and all further details or advice will be willingly given by the Director of the Treptow Observatory at the above address.

HIGHEST BALLOON ASCENSION IN NORTH AMERICA[1].

By Prof. A. L. ROTCH, Blue Hill Observatory, Mass.

Although a large number of *ballons-sondes* were dispatched from St. Louis in 1904–7 under the direction of the writer[2], none had been employed in the eastern States until last year. In May and July, 1908, four *ballons-sondes* were launched from Pittsfield, Mass., with special precautions to limit the time they remained in the air and so prevent them from drifting out to sea with the upper westerly wind. Three of the registering instruments have been returned to the Blue Hill Observatory with good records. The first instrument, sent up on May 7, was not found for 10 months and the record, forming the subject of the present article, is very interesting, because it gives complete temperature data from the ground up to 17,700 meters (11 miles). This is 650 meters higher than the highest ascension from St. Louis.

On May 7, 1908, a general storm prevailed, so that the balloon, traveling from the east, was soon lost in the clouds and its subsequent drift could not be followed; but the resultant course was 59 miles from the southwest, as determined by the place where the instrument fell 2 hours later. At the ground the temperature was 4.5° C., and this decreased as the balloon rose to the base of the clouds, which itself was considerably warmer than the underlying air. Above the clouds the temperature continued to fall with increasing rapidity up to a height of 12,500 meters (7.7 miles) where the minimum of —54.5° C. was registered. Here the great warm stratum was penetrated farther than ever before in this country, namely, to the height of 17,700 meters (11.0 miles) where the temperature was —46.5° C. An increase of 8.9° C. occurred, however, in the first 3,000 meters, for above 15,500 meters nearly isothermal conditions prevailed, confirming the belief of Teisserenc de Bort that what he calls the "stratosphere" is composed of a lower inverting layer with isothermal conditions above extending to an unknown height.

In an ascension last November in Belgium the relatively warm stratum was found to extend from 12,900 meters (8.0 miles) to the enormous height of 29,000 meters (18.0 miles), where there was still no indication of its diminution.

TORNADOES IN OKLAHOMA.

On May 29, 1909, at about 4:30 p. m., two straight winds from about west and southwest respectively converged upon Key West, Lincoln County, and are reported to have there combined in a tornado of some intensity which traveled northeastward, crossing the Frisco railroad at Depew, Creek Nation. In the vicinity of Key West the straight winds are reported to have destroyed property to the value of $2,500 and injured six persons. The tornado here had a path a quarter of a mile wide. The storm reached Depew, fifteen miles northeast, about 5:30 p. m., and there destroyed thirty or forty houses and injured two men. Heavy rainfall accompanied this storm and caused great damage.

A second tornado, with a path two hundred yards wide, occurred almost simultaneously six or eight miles to the south, along a parallel path between Arlington and Newby. At the confluence of Pataqua Creek and Deep Fork of Canadian River this tornado killed four persons. Three others were injured and ten houses destroyed along its path. Heavy rain and hail fell after the tornado had passed.—*C. A., jr.*

[1] Reprinted from Science, 1909, 30(n.s.):302–3.
[2] See Science, 1908, 27(n.s.):315.